

The diagram illustrates a multi-cellular communication system. It consists of three cells, labeled 30, 32, and 34, which are represented by overlapping ellipses. Each cell contains a base station component, represented by a square block. Cell 30 includes an antenna (20) and a transceiver (10). Cell 32 includes an antenna (21) and a transceiver (11). Cell 34 includes an antenna (23) and a transceiver (12). The base stations are interconnected by a network, represented by lines connecting the square blocks. The entire system is shown within a larger rectangular frame.

FIG.2

	DEFINITION	CCPCH
(a) MAXIMUM TOTAL TRANSMISSION POWER OF BASE STATION (dBm)	$10^{(b)/10} / 10^{(a)/10} \times 100$	42.00
(b) TRANSMISSION POWER OF DESIGN TARGET CHANNEL (dBm)		36.00
(b1) POWER RATIO OF DESIGN TARGET CHANNEL (%)		25.12
(c) TRANSMITTER FEEDER LOSS (dB)		3.00
(d) TRANSMITTER ANTENNA GAIN (dB)	$(a)-(c)+(d)$ $(b)-(c)+(d)$	17.00
(e) EFFECTIVE TOTAL RADIATION POWER (dBm)		56.00
(f) EFFECTIVE RADIATION POWER OF DESIGN TARGET CHANNEL (dBm)	$10 * \text{LOG}((k) * 1000)$ $(i)+(j)+(l)$	50.00
(g) RECEIVER ANTENNA GAIN (dB)		0.00
(h) RECEIVER FEEDER LOSS (dB)		0.00
(i) THERMAL NOISE POWER DENSITY (dBm/Hz)		-174.00
(j) RECEIVER NOISE FIGURE NF (dB)	$10^{(p)/10} \cdot 10^{(q)/10}$ $1 - \frac{(k) \cdot 10^3 \cdot 10^{(p)/10}}{(n) \cdot 10^6 \cdot (b1)/100} \cdot ((q) + 10^{(o)/10})$	5.00
(k) SYMBOL RATE (kps)		15.00
(l) SYMBOL RATE (dBHz)		41.76
(m) THERMAL NOISE POWER (dBm)		-127.24
(n) CHIP RATE (Mcps)	$(f)-(r)+(g)-(h)+(s)-(t)-(u)-(v)$ ACCORDING TO REFERENCE 3,ETC.	3.84
(o) COEFFICIENT OF INTERFERENCE FROM OTHER CELLS (dB)		8.00
(p) REQUIRED SIGNAL TO INTERFERENCE POWER Λ (dB)		7.00
(q) ORTHOGONALITY COEFFICIENT		0.50
(r) REQUIRED RECEIVING POWER (dBm)	$(f)-(r)+(g)-(h)+(s)-(t)-(u)-(v)$ ACCORDING TO REFERENCE 3,ETC.	-116.95
(s) DHO GAIN (dB)		0.00
(t) SHADOWING MARGIN (dB)		5.30
(u) FLUCTUATION MARGIN OF HIGH-SPEED TRANSMISSION POWER CONTROL (dB)		0.00
(v) BUILDING PENETRATION LOSS (dB)		6.00
(w) A ANTENNA BEAM TILT COMPENSATION (dB)		0.00
(x) ALLOWABLE PROPAGATION LOSS (dB)		155.65
(y) RANGE (km)		4.12

FIG.3

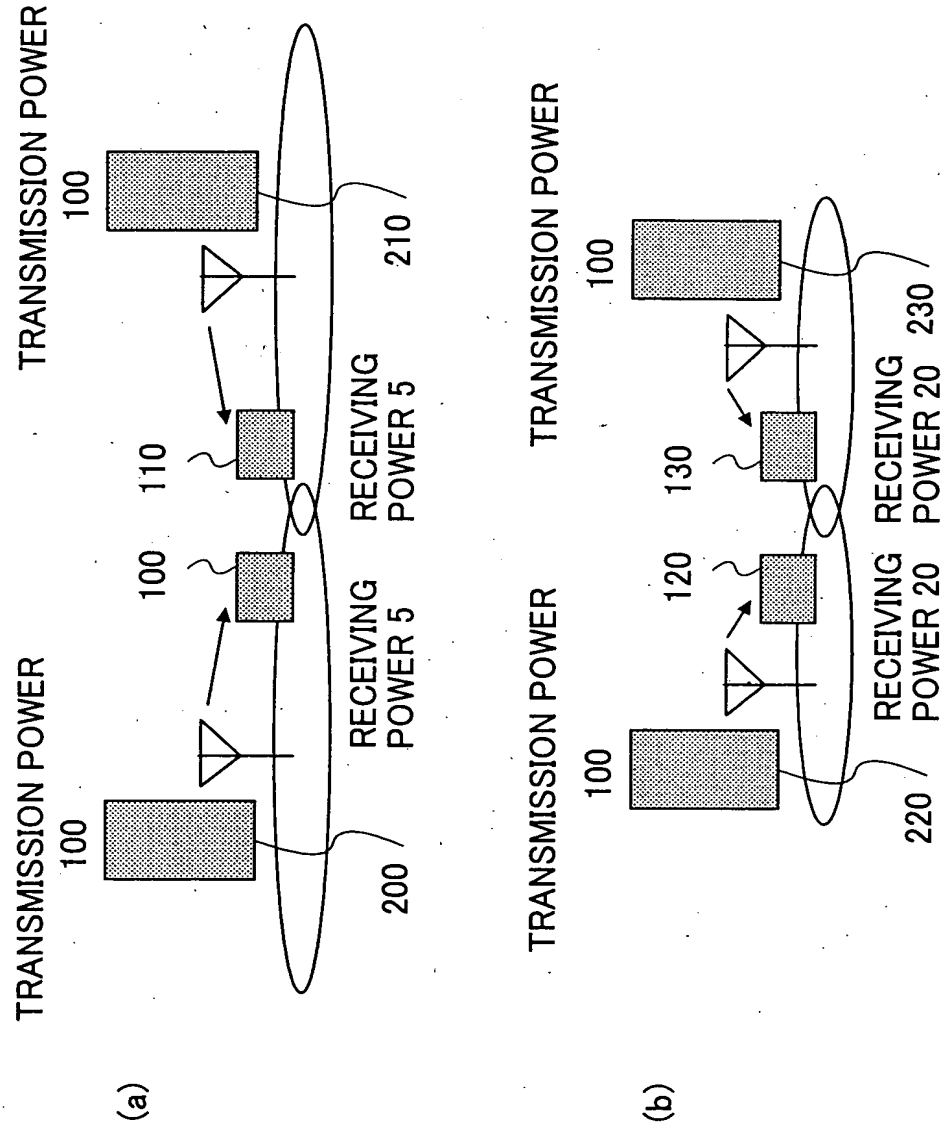


FIG.4

	①	②	③
SERVICE	12.2k-Speech	64kbps	384kbps
(a) MAXIMUM TOTAL TRANSMISSION POWER OF BASE STATION (dBm)	21.00	24.00	-24.00
(b) TRANSMISSION FEEDER LOSS (dB)	0.00	0.00	0.00
(c) TRANSMITTER ANTENNA GAIN (dBi)	0.00	0.00	0.00
(d) TRANSMISSION EFFECTIVE RADIATION POWER=a-b+c (dBm)	21.00	24.00	24.00
(e) RECEIVER ANTENNA GAIN (dBi)	17.00	17.00	17.00
(f) RECEIVER FEEDER LOSS (dB)	1.00	1.00	1.00
(g) RECEIVER NOISE FACTOR NF (dB)	5.00	5.00	5.00
(h) THERMAL NOISE POWER DENSITY (dBm/Hz)	-174.00	-174.00	-174.00
(i) INTERFERENCE MARGIN (dB)	6.00	6.00	6.00
(j) TOTAL NOISE (INTERFERENCE + THERMAL NOISE) =g+h+i (dBm/Hz)	-163.00	-163.00	-163.00
(k1) INFORMATION SPEED (kbps)	12.20	64.00	384.00
(k2) INFORMATION SPEED (dBHz)	40.86	48.06	55.84
(l) REQUIRED $E_b/(N_0+I_0)$ (Λ) (dB)	6.10	3.80	2.70
(m) REQUIRED RECEIVING POWER=j+k2+l (dB)	-116.04	-111.14	-104.46
(n) DHO GAIN (dB)	3.00	3.00	3.00
(o) SHADOWING MARGIN (dB)	5.30	5.30	5.30
(p) MARGIN OF HIGH-SPEED TRANSMISSION POWER CONTROL(dB)	2.00	2.00	2.00
(q) BUILDING PENETRATION LOSS (dB)	6.00	6.00	6.00
(r) ANTENNA BEAM TILT COMPENSATION (dB)	0.00	0.00	0.00
(s) ALLOWABLE PROPAGATION LOSS= d+e-f-m+n-o-p-q-s (dB)	142.74	140.84	134.16
(t) MAXIMUM REACHABLE RANGE (km) (CALCULATED BY REFERENCE 3,ETC.)	1.88	1.66	1.06